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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/543,150

Filing Date: July 25, 2005

Appellant(s): SAISHO ET AL.

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Jay E. Rowe, Jr., Ph.D.  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 11, 2010 appealing from the Office action mailed December 21, 2009.

**(1) Real Party in Interest**

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The following is a list of claims that are rejected and pending in the application:  
2, 4-5 and 12-13

**(4) Status of Amendments After Final**

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

**(5) Summary of Claimed Subject Matter**

The examiner has no comment on the summary of claimed subject matter contained in the brief.

## **(6) Grounds of Rejection to be Reviewed on Appeal**

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

## (7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

## **(8) Evidence Relied Upon**

WO 02/090031 A2 SYSLAK et al. 11-2002

## **(9) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

Claims 2, 4-5 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Syslak (WO 02/090031).

Syslak discloses that an aluminum multilayer brazing sheet can be made having an inner aluminum alloy cladding layer comprising 0.7-1.5 wt.% Mn, 0-1.2 wt.% Si, 0-0.6 wt.% Fe, 1.0-2.0 wt.% Zn, 0.5 wt.% Mg and 0-0.5 wt.% Ti (e.g. see page 5, lines 22-26). In addition, Syslak discloses that the core material is an aluminum alloy comprising 0.7-1.5 wt.% Mn, 0-0.6 wt.% Si, 0-0.6 wt.% Fe, 0-0.6 wt.% Zn, 0-1.0 wt.% Cu, 0-0.4 wt.% Mg and 0-0.5 wt.% Ti (e.g. see page 5, lines 6-13). The brazing alloy layer can comprise 4-14 wt.% Si, 0-0.8 wt.% Fe, 0-0.5 wt.% Cu, 0-0.5 wt.% Mg, 0-0.5 wt.% Mn, 0.1-2 wt.% Zn and 0-0.5 wt.% Ti (e.g. see page 5, lines 1-5) is clad on one or both sides of multilayer sheet (e.g. see page 3, lines 5-15). Higher Zn content in the cladding layer renders the cladding layer less noble than the core layer (e.g. see page 6, lines 9-19). The braze layer can be arranged on one side of the core and the inner cladding layer can be arranged on the other side of the core (e.g. see claim 4). Although the alloying constituent ranges for the layers of Syslak may not have the same endpoints as the ranges described in the rejected claims, the ranges do overlap or closely approximate. Therefore, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. See MPEP 2144.05. While it is noted that the compositions in the claims may use the term "consisting essentially of", this term allows for additional alloying constituents which do not affect the basic and novel characteristics of the invention, *Ex parte Davis, et al.*, 80 USPQ 448 (PTO Bd. App. 1948); *In re Janakirama-Rao*, 137 USPQ 893 (CCPA 1963). There is no factual evidence of record that the additional constituents of Syslak affect the basic and novel characteristics of the invention and therefore

they are not prohibited by the "consisting essentially" claim language. See MPEP 2111.03. Syslak may differ from the claims in that the magnesium content of Syslak's cladding is 0.5 wt.% Mg and the claimed magnesium content starts at 0.52 wt.% Mg. However, one of ordinary skill in the art would not expect a two hundredth of a percent difference in magnesium content to result in a patentable distinction over the alloy of the Syslak. In addition, there is no factual evidence of record that a difference of 0.02 wt.% Mg results in a patentable distinction. A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05.

#### **(10) Response to Argument**

Appellant's arguments have been carefully considered, but are not convincing. The claimed invention is to an aluminum brazing sheet made of a core, a cladding material on one side of the core material and a brazing material on the other side of the core. As noted in the rejection, Syslak discloses an aluminum brazing sheet made of a core, a cladding material on one side of the core material and a brazing material on the other side of the core (e.g. see page 3, lines 5-15; claims 1-4) . The table, below, shows the appellant's claimed composition ranges for the cladding layer and the core layer and also shows Syslak's disclosed composition ranges for the cladding layer and the core layer:

	<b>Invention - Wt.%</b>	<b>Syslak (WO 02090031 A2) - Wt.%</b>
<b>CLADDING</b>	Independent Claim 2	Page 5, line 22- page 6, line 2
<b>Mg</b>	0.52-0.7	0.5
<b>Si</b>	0.5-1.5	0-1.5
<b>Mn</b>	0.4-1.2	0.7-1.5
<b>Zn</b>	0.3-6	1.0-2.0
<b>Al</b>	Balance	Balance + 0.5 Cu, 0-0.5 Ti
<b>CORE</b>	Independent Claim 2	Page 5, lines 6-13
<b>Si</b>	0.3-0.7	0-0.6
<b>Mn</b>	0.6-1.2	0.7-1.5
<b>Cu</b>	0.5-1.0	0-1.0
<b>Mg</b>	0-0.3	0-0.4
<b>Ti</b>	0-0.2	0-0.5
<b>Cr</b>	0-0.15	0
<b>Al</b>	Balance	Balance + 0-0.6 Fe, 0-0.6 Zn

Regarding the rejection of the claims under 35 U.S.C. 103(a) as being unpatentable over Syslak (WO 02/090031), appellant argues that nowhere does Syslak disclose or suggest a brazing

sheet wherein a potential of the cladding is lower than a potential of the core and a sacrificial anode effect is obtained as described in claim 2. The examiner notes, however, that the potentials of the core and the cladding are inherent to the compositions of the core and the cladding materials. As shown in the table above, appellant's claimed composition and Syslak's disclosed composition extensively overlap for all the claimed alloying constituents with the exception of the Mg content in the cladding. The Mg content in the cladding differs by only two hundredth of a percent. Alloying constituents which are disclosed by Syslak to include zero may be considered to be zero since they are clearly optional. Since Syslak's core and cladding compositions are essentially the same as those claimed by appellant, properties such as the relative potentials of the alloys would be expected to be the also be the same or essentially the same. Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on appellants where rejection based on inherency under 35 U.S.C. § 102 or on *prima facie* obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). Products of identical chemical composition can not have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01(II). In any event, on the issue of potential, Syslak clearly does recognize

(e.g. see page 6, lines 9-19) that higher Zn content renders a component less noble than a lower Zn content component. As shown in the composition table above, the Zn content in Syslak's core will always be less than the Zn content in the cladding. Therefore, one of ordinary skill in the art would understand that the potential of the cladding layer of Syslak's brazing sheet would be lower than the potential of the core and a sacrificial anode effect would result. In any event, it is not necessary that the prior art describe or even recognized inherent properties. In view of the above, the claimed relationship of the potential between the cladding and the core would be met when the optional Zn content in Zyslak's core alloy composition is zero. And also, the claimed relationship of the potential between the cladding and the core would be met when the optional Zn content in Zyslak's core alloy composition is not zero. Therefore, none of the optional or non-optional additional constituents of Syslak's core and cladding alloy compositions have been shown to materially change the basic and novel characteristics of the claimed invention whether they are zero or not.

Appellant further argues that the "core material contains up to 0.6 weight % Zn (Claim 6) or 0.1 to 2 weight % Zn (Claim 7)" (e.g. see page 5 of the Brief). The examiner notes that the embodiment of "up to 0.6 weight % Zn" is addressed in the preceding paragraph. Regarding the issue of "0.1 to 2 weight % Zn", the examiner notes that this zinc range relates to a different embodiment than the embodiment used to reject the claims. Syslak discloses two embodiments. The first embodiment is to the core alloy composition for tubes, headers and sideplates (e.g. see page 5, lines 6-13) and the second embodiment is to core alloy composition for the fins (e.g. see page 5, lines 14-21). The rejection is clear that the embodiment to the core alloy for tubes, headers and sideplates (e.g. see page 5, lines 6-13) is the embodiment used to reject the pending

claims and therefore appellant's arguments addressing the composition of the core alloy of the fins are not pertinent to issues regarding the propriety of the pending rejection.

Appellant argues that Syslak differs from the claims in that the magnesium content of Syslak's cladding is 0.5 wt.% Mg and the claimed magnesium content starts at 0.52 wt.% Mg (e.g. see pages 6-7 of the Brief). The examiner notes, however, that one of ordinary skill in the art would not expect a two hundredth of a percent difference in magnesium content to result in a patentable distinction over the alloy of the Syslak. There is no factual evidence of record that a difference of 0.02 wt.% Mg results in a patentable distinction between the appellant's claimed brazing sheet and Syslak's brazing sheet. A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. See *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05. Appellant argues that the Declaration under 37 C.F.R. 1.132 of Toshiki Ueda (received May 27, 2009) does establish that a 0.02% difference in Mg content results in a difference in post brazing strength as shown by Examples 1, 2 and 10 (e.g. see pages 6-7 of the Brief). The examiner notes that too many alloying constituents (e.g. Si, Mn, Zn content) were simultaneously varied in the results of Table 1 of the Declaration to directly attribute differences in post brazing strength to the small change Mg content alone. The examiner's observation is clearly confirmed by the fact that many examples in Table 1 (e.g. 4, 8, 9, etc. . .) contain considerably more Mg than Example 1, but do not result in a higher post brazing strength. Therefore, appellant has clearly not established that a 0.02% difference in Mg is a patentable distinction over Syslak. It should also be noted that the appellant's specification shows anywhere from 0.4-0.7 wt.% Mg to provide sufficient strength for

the purposes of the appellant's invention (e.g. page 4, last paragraph) and therefore no patentable distinction has been originally disclosed to exist over only certain portions of this range over any other portions of this range. Regarding appellant's argument that Syslak does not disclose or suggest post-brazing strength improvement resulting between 0.50 wt.% and 0.52 wt.% Mg content in the cladding (e.g. page 7 of the Brief), as noted above, it is not clear whether this improvement can be attributed to the change in Mg content and it is also not necessary that the reference have the same purpose in mind as the purpose envisioned by appellant for each alloying constituent.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/John J. Zimmerman/

Conferees:

/Jennifer C. McNeil/  
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